CLAIMS

1. An operation control method for a train, comprising:

determining whether the train meets an automatic operation condition, and outputting prompt information for indicating that the train is allowed to operate in an automatic operation mode if the train meets the automatic operation condition;

controlling the train to operate in the automatic operation mode in a case that an ATO starting button on a driver operation platform is triggered;

the operation control method characterised by further comprising;

determining whether the train is located at an intermediate station and is not departed, and determining whether the train operates in the automatic operation mode if the train is not departed at the intermediate station, wherein the intermediate station is a station in a train traveling route other than a starting station and a terminal station; and

if the train is not departed at the intermediate station and operates in the automatic operation mode and if the ATO starting button is triggered by the driver, controlling the train in the automatic operation mode to perform station automatic departure, section automatic operation, station automatic parking, door opening protection, and train door and platform door linkage control.

2. The operation control method for a train according to claim 1, wherein the determining whether the train meets an automatic operation condition comprises:

determining whether the train operates in a fully monitored mode;

determining whether a direction handle of the train is arranged forward;

determining whether a driver controller handle of the train is located at a zero position;

determining whether an automatic operation system of the train operates normally;

determining whether an automatic protection system of the train outputs an emergency braking signal; and

determining whether units of the train are allowed to operate in an ATO mode, wherein

if the train operates in the fully monitored mode, the direction handle is arranged forward,

the driver controller handle is located at the zero position, the automatic operation system operates normally, and the automatic protection system outputs no emergency braking signal, it is determined that the train meets the automatic operation condition.

3. The operation control method for a train according to claim 2, further comprising:

determining whether the train is allowed to operate in the ATO mode, and controlling the train to exit the automatic operation mode if the train is not allowed to operate in the ATO mode.

4. The operation control method for a train according to claim 3, wherein a condition for exiting the automatic operation mode comprises:

tractions to two or more of units of the train are removed,

an air brake of at least one of the units of the train is unavailable,

the train is in a speed limiting protection state,

the train is in a service braking state,

the train is in an emergency braking state,

the train is in a state that holding braking is isolated, or

a communication between the train and an automatic operation system is ineffective.

5. An operation control system for a train, comprising:

an automatic operation system, configured to control the train to operate in an automatic operation mode to perform automatic train operation;

an operation mode switching system, configured to:

determine whether the train meets an automatic operation condition, and output prompt information for indicating that the train is allowed to operate in the automatic operation mode if the train meets the automatic operation condition,

control the automatic operation system to start in a case that an ATO starting button on a driver operation platform is triggered, to control the train to operate in the automatic operation mode,

characterised in that,

the operation mode switching system is further configured to determine whether the train is located at an intermediate station and is not departed, and determine whether the train operates in the automatic operation mode if the train is not departed at the intermediate station, wherein the intermediate station is a station in a train traveling route other than a starting station and a terminal station, and

if the train is not departed at the intermediate station and operates in the automatic operation mode and if the ATO starting button is triggered by the driver, control the train in the automatic operation mode to perform station automatic departure, section automatic operation, station automatic parking, door opening protection, and train door and platform door linkage control; and

the operation control system further comprising an automatic protection system, configured to control the train to travel at a traveling speed not greater than a target speed.

6. The operation control system for a train according to claim 5, wherein for determining whether the train meets the automatic operation condition, the operation mode switching system is further configured to:

determine whether the train operates in a fully monitored mode;

determine whether a direction handle of the train is arranged forward;

determine whether a driver controller handle of the train is located at a zero position;

determine whether an automatic operation system of the train operates normally;

determine whether an automatic protection system of the train outputs an emergency braking signal; and

determine whether units of the train are allowed to operate in an ATO mode, wherein

if the train operates in the fully monitored mode, the direction handle is arranged forward, the driver controller handle is located at the zero position, the automatic operation system operates normally, and the automatic protection system outputs no emergency braking signal, it is determined that the train meets the automatic operation condition.

7. The operation control system for a train according to claim 6, wherein the operation mode switching system is further configured to:

determine whether the train is allowed to operate in the ATO mode, and control the train

to exit the automatic operation mode if the train is not allowed to operate in the ATO mode.

8. The operation control system for a train according to claim 7, wherein a condition for exiting the automatic operation mode comprises:

tractions to two or more of units of the train are removed,

an air brake of at least one of the units of the train is unavailable,

the train is in a speed limiting protection state,

the train is in a service braking state,

the train is in an emergency braking state,

the train is in a state that holding braking is isolated, or

a communication between the train and an automatic operation system is ineffective.